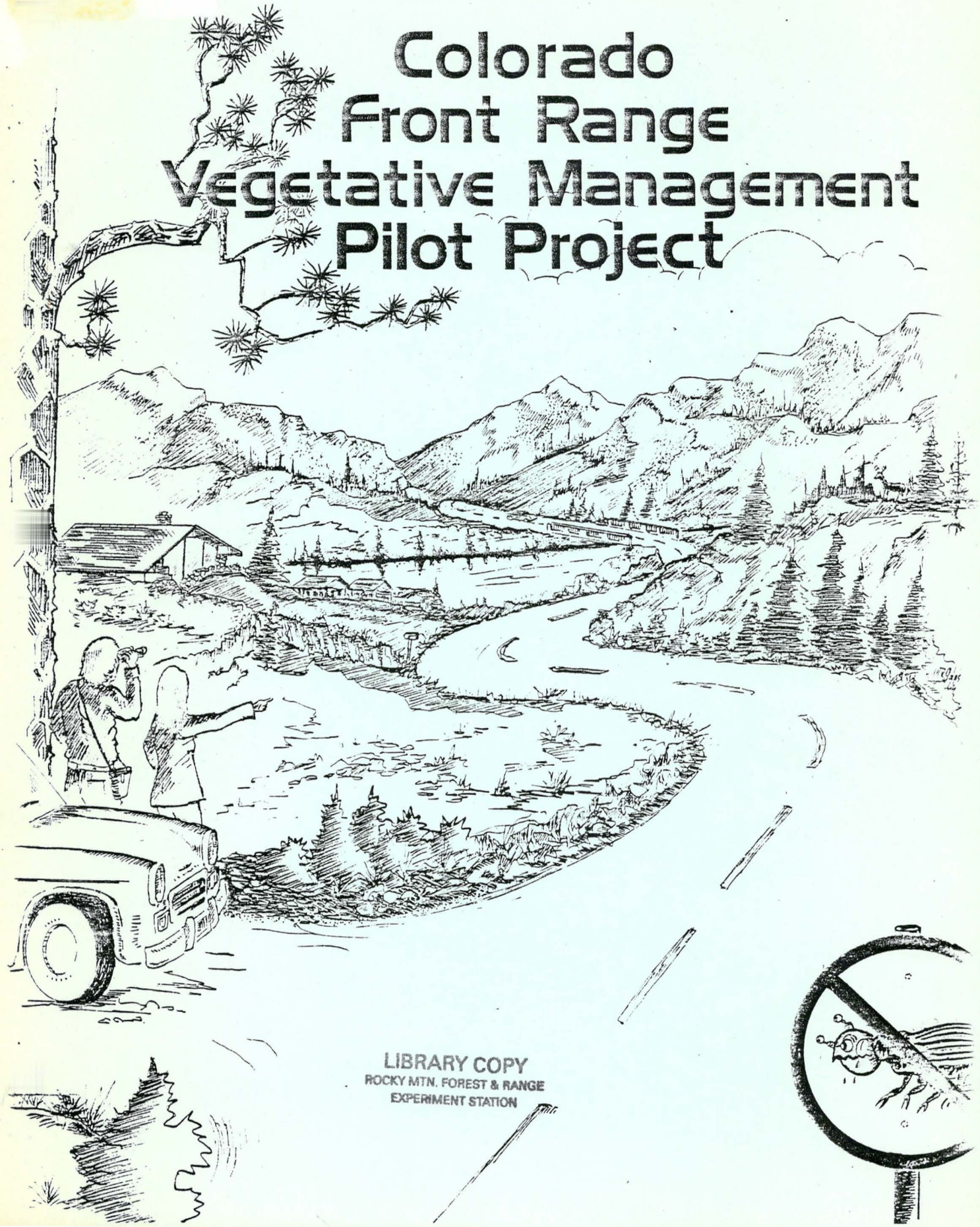
Thesis/
Reports
U. S. F. S.
Vol. 1

COLORADO FRONT RANGE VEGETATIVE MANAGEMENT PILOT PROJECT EXECUTIVE SUMMARY

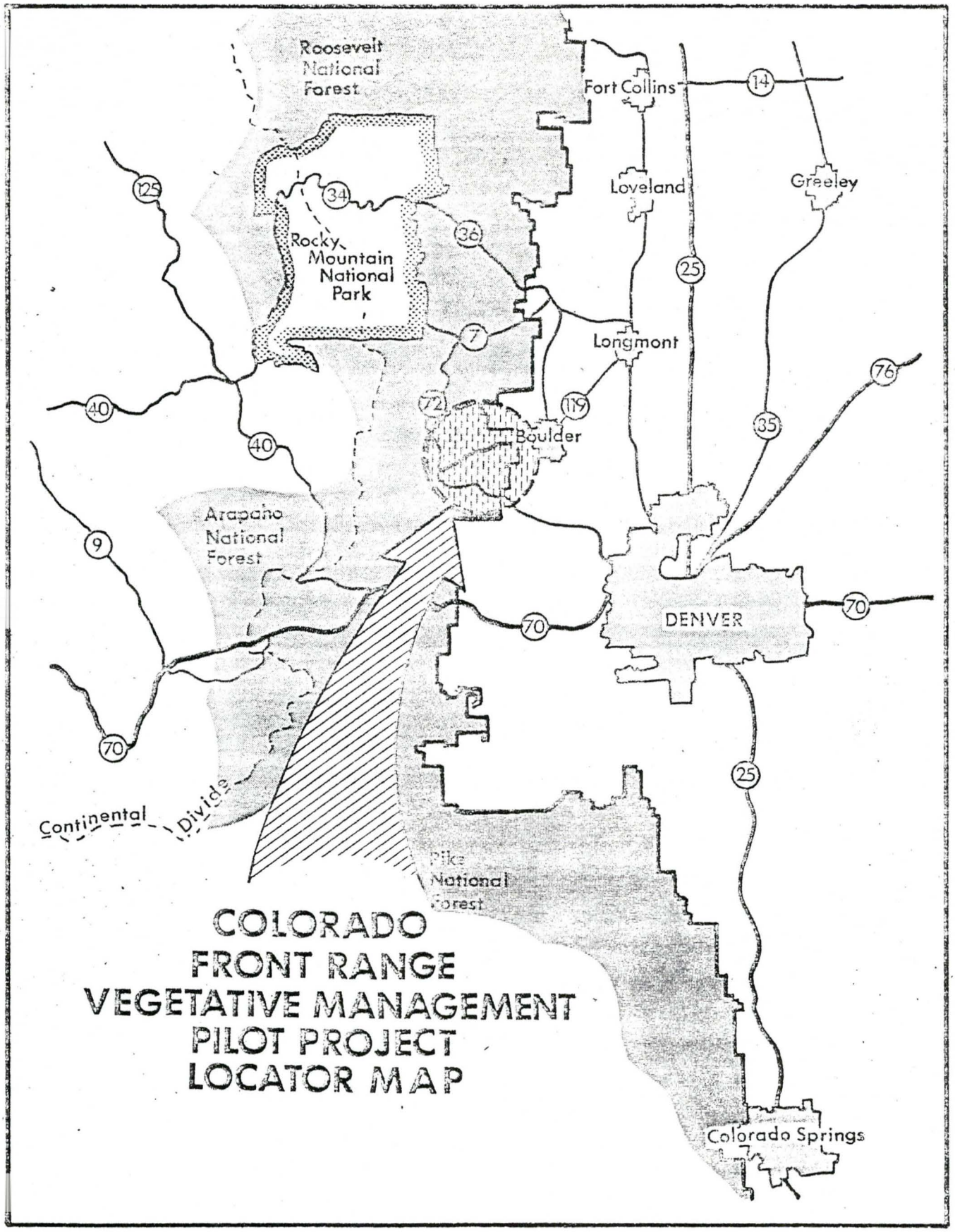
United States Forest Service

Executive Summary for the

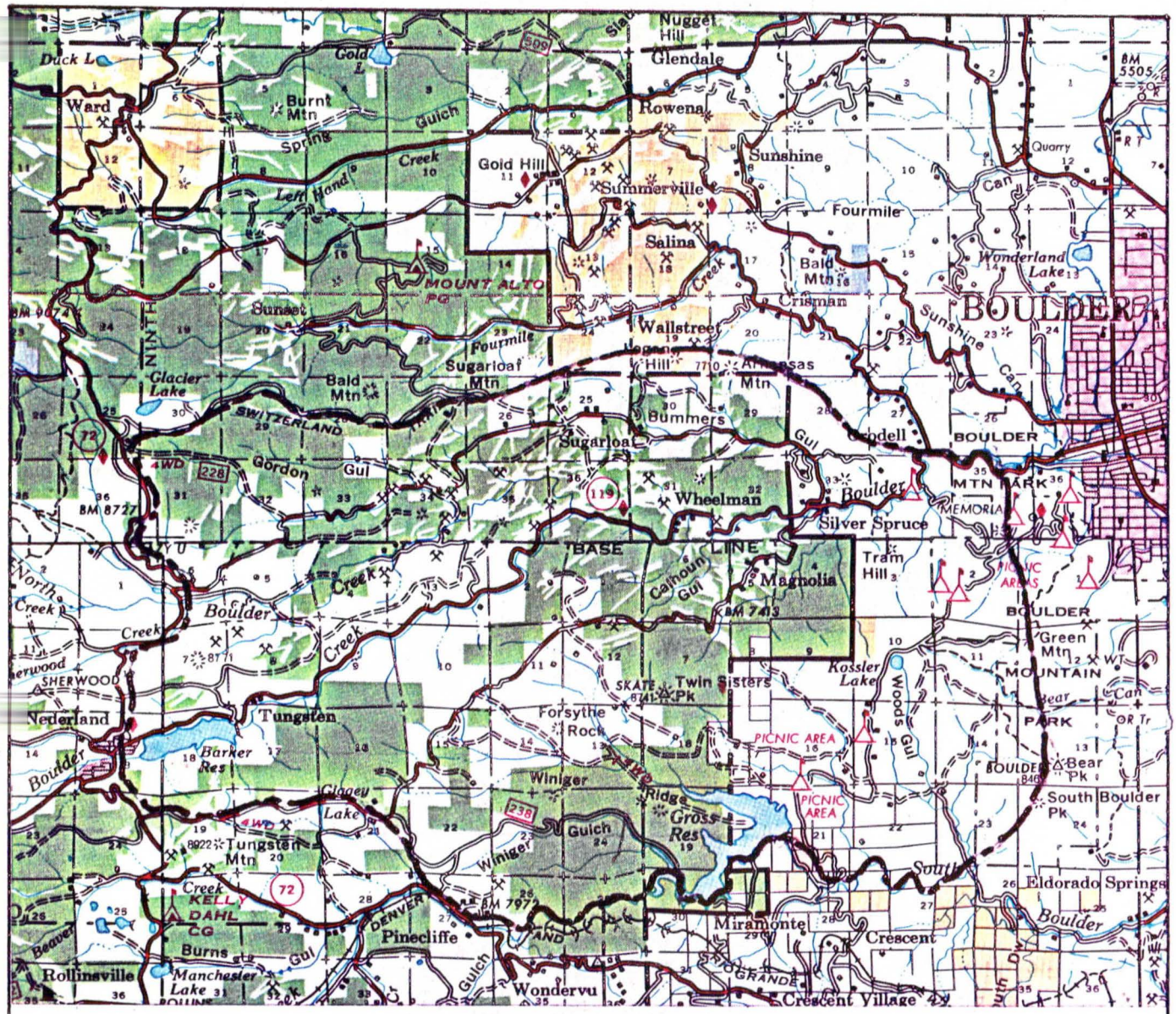
Colorado Front Range Vegetative Management Pilot Project



LIBRARY COPY
ROCKY MTN. FOREST & RANGE
EXPERIMENT STATION



COLORADO FRONT RANGE VEGETATIVE MANAGEMENT PILOT PROJECT LOCATOR MAP



Scale 1½"=1 mile

1 0 1 2 3 4 5 Miles

LEGEND

- Pilot Project Area Boundary
- National Forest Boundary
- County Boundary Line
- Paved Road
- All Weather Road
- Dirt Road
- 4WD Primitive Road and Four Wheel Drive Road
- Trail
- Railroad Tunnel
- Recreation Site
- Recreation Site other than Forest Service
- Roosevelt National Forest Land
- BLM Land
- State Land (permission required to enter)

COLORADO FRONT RANGE VEGETATION MANAGEMENT PILOT PROJECT AREA MAP

Executive Summary of the Environmental Analysis, Project Proposal and Benefit-Cost Studies for the Colorado Front Range Vegetative Management Pilot Project -

Roosevelt National Forest, Rocky Mountain Region

Forest Service, USDA

Background

Colorado's Front Range[1/] has experienced repeated mountain pine beetle epidemics since the early 1900's. Infestation has accelerated to the point that in 1975 an estimated 1.5 million dying trees mottled the 580 thousand acre ponderosa pine belt. The epidemic has attracted considerable local as well as national attention because of its broad extent.

Beetle epidemics, though not completely understood, are one of nature's processes for naturally regenerating pine forests. Human desires, for a multitude of differing values, are not tolerant of these processes. Management, through application of proven techniques, can modify the life cycle of growth, maturity, and death and maintain a plateau of growth, thus reducing the potential of a catastrophic forest death. The forests can be managed through application of proven techniques, to perpetuate the beauty, wildlife and recreation opportunities and reduce the likelihood of devastation by fire, insect and disease.

To achieve these objectives a pilot project applying intensive forest management activities to 34 thousand acres of private and public lands, in Boulder County Colorado, is proposed jointly by Boulder County, the Colorado State Forest Service, and the Forest Service, U.S.D.A.. State, County, City and private and Federal funds (FY 78) totaling $4.3 million, will be used to initiate a vegetative management program for Colorado's Front Range ponderosa pine stands. This project will, on a pilot basis, demonstrate applicability of treatments, refine cost estimates, and establish criteria for expansion to an additional 500 thousand acres of threatened pine stands on the Front Range.

The project goals are: establishment of vigorous, insect and disease resistant trees; to demonstrate research results on a pilot scale; abatement of fire fuels to a level that reduces the probability of large wildfires; provide suitable habitat for the needs of a variety of wildlife; and to restore scenic quality to the recreationally significant Front Range.

1/ Front Range - The eastern slope of first mountain range reached from the Eastern plains, extending from the Colorado-Wyoming border to Pikes Peak.

Within the Forest Service, U.S.D.A. the project represents a concerted effort to integrate the responsibilities of National Forest System, State and Private Forestry, and Research into a viable problem solving, results oriented program.

Pilot Area

The pilot area, approximately 50 square miles, extends west and southwest from the west edge of the City of Boulder, to the Peak to Peak Highway. (See attached map).

The area was selected because it: typifies intermixed landownerships in the Front Range (44 percent private, 56 percent public or quasi-public); has sixteen residential subdivisions (population 4 to 5 thousands); receives heavy recreation use (136 thousand visitor days per year); is heavily infested with beetles; has four established designated pine beetle control areas (an area where beetle control is carried out in an organized way); has several active landowner associations; contains informed, active citizens that have demonstrated a desire for management solutions; and has excellent rapport and cooperation between private landowners and governmental entities.

Proposed Activities

Based upon specific site and vegetative conditions, several management techniques will be applied; (1) Thinning and product removal to reduce stand density (13,600 acres); (2) Cut and chemically treat, burn or remove infested trees (6,500 acres); (3) Reduce fuels for forest fires by removing, piling, burning and chipping debris (16,600 acres); (4) Plant trees or browse plants for wildlife (12,000 acres). In most cases more than one technique will be applied to each acre.

Research will test the applicability of results from other regions and lead to an improved understanding of the benefits occurring to recreation, wildlife, fire protection, and the forest ecosystem in general. This pilot scale application provides a mechanism for effective transfer of our current state-of-the-knowledge in ponderosa management. Specific activities include:

-- Evaluate the response of users to the esthetic qualities of areas receiving different vegetative treatments.

-- Evaluate the response of wildlife on a species specific basis to varying levels of habitat improvement activities.

-- Demonstrate the usefulness of thinning in second growth ponderosa pine as a means of mountain pine beetle control.

-- Identify site specific parameters which might require modification of thinning prescriptions to increase multiple use benefits.

-- Determine utilization potential for the fiber being temporarily removed both from the pilot project area and from the entire Colorado Front Range Vegetation Management Program.

-- Quantify the fire hazard reduction resulting from fuel treatment, improved fire access, and fuel breaks.

-- Evaluate the economics of fire protection, taking into account presuppression costs, fire readiness costs, and fire fighting costs balanced against values and risk for the Colorado Front Range.

-- Appraise the effects of the pilot project with respect to dispersed recreation use with special focus on increased accessibility and awareness of the area by post-treatment users.

-- Investigate interactions between thinning densities and dwarf mistletoe, root rot, and insect pests.

This Plan is a budget proposal for additional Federal funding in FY 78 within Forest Service appropriations. Management activities will be performed through existing National Forest programs as well as cooperative State and Private Forestry Programs which are matched with private and State monies. Work will be accomplished by private landowners through labor and equipment contributions, contractors, and Federal, state and county workers. The manpower programs (YCC,CETA), will be a major source of labor for this project. The project, in turn, will provide many excellent opportunities for outstanding work experiences for young people. The project will provide at least 400 man-years of employment.

Source		Funds Thousands of Dollars
State of Colorado		$250
Private (includes labor and equipment provided by landowners)		248
Forest Service - U.S.D.A.		
State and Private Forestry -	$1,509	
National Forest System	1,224	
Research	600	3,333
Local Government (City, County)		52
Manpower Programs (Contributed)		458
	TOTAL	$4,341

Environmental Analysis

A comprehensive analysis has been completed and submitted to the Forest Service National Headquarters. The analysis evaluates two other alternatives; (1) continuing current levels of direct control (chemicals and burning) with minor stand management; (2) allowing the epidemic to run its natural course without management influence (no costs).

Each alternative was analyzed by an interdisciplinary team to determine expected differences in output costs, goal satisfaction and social, economic and environmental effects.

The proposal was selected because it best satisfies the selection criteria; has the least adverse environmental effects; has the most favorable social effect; and best satisfies the goals of management.

Alternative 1 was rejected because of significant potential environmental and social effects, particularly catastrophic wildfire risk.

Alternative 2 was also rejected because of adverse environmental effects and the drastic potential changes in the natural vegetation unacceptable to state and local people.

An Environmental Statement, under Section 102 (2) (c) of PL-91-900 is not recommended since the probable impacts are not significant, highly controversial, or legislatively related.

Benefit/Cost Analysis

Three (3) economic parameters were tested for each alternative using the INVEST III computer program; (1) benefit/cost ratio (BCR), (2) net present worth (NPW) and (3) internal rate of return (IRR) at a 10 percent interest rate. The results are tabulated below:

Economic Parameter	Alternative #1 Continue Current Direction	Alternative #2 Run Natural Course	Proposed Project
Benefit/cost ratio	1.41	.22	1.89
Net Present Worth ($M)	304.55	-258.48	3,098.99
Internal Rate of Return	28.66	0.00	31.23

Property values, fire damage and suppression cost, wildlife, wood fiber, Congressional inquiries (Admin. time and cost) Recreation and scenery were considered in the analysis.

With the assumptions utilized, the proposed project is the most economically efficient.

Public Support

Expressed public concern has contributed significantly in identifying issues and developing long term solutions to the beetle epidemic. The Congressional delegation, state and county governments have lent strong support for corrective action.